

REMARKS

Claims 11-29 and 42-57 are currently pending in the subject application. Claims 11-29 are allowed, and claims 42-57 are presently under consideration. Applicant thanks the Examiner for allowing claims 11-29.

Claims 11, 25, 27, 42, 56 and 57 are amended herein. The Specification is amended as shown in page 2 of this Reply.

Applicant's representative thanks Examiner Winder for the telephone interview of August 6, 2007 where amendments to the Non-Compliant Response to OA as well as supplemental amendments were discussed. In particular, the claim status identifier for claim 56 has been revised, and all independent claims have been amended to further define the term circular reference.

Applicant's representative also thanks the Examiner for granting the teleconference interview on May 11, 2007. The time spent on the interview as well as her observations are truly appreciated. During the interview, the Examiner and Applicant's representative discussed the merits of independent claims 42, 56, and 57 in view of Szymanski *et al.* Emphasis was placed on circular references.

Favorable reconsideration of the subject patent application is respectfully requested in view of the comments and amendments herein.

I. Rejection of Claims 56 and 57 Under 35 U.S.C. §102(b)

Claims 56 and 57 stand rejected under 35 U.S.C. §102(b) as being anticipated by Szymanski *et al.*, (USPN 5,566,637). Applicant's representative respectfully requests that the rejection of independent claims 56 and 57 be withdrawn.

For a prior art reference to anticipate, 35 U.S.C. §102 requires that "each and every element as set forth in the claim is found, either expressly or inherently described, in a single prior art reference." *In re Robertson*, 169 F.3d 743, 745, 49 USPQ2d 1949, 1950 (Fed. Cir. 1999) (*quoting Verdegaal Bros., Inc. v. Union Oil Co.*, 814 F.2d 628, 631, 2 USPQ2d 1051, 1053 (Fed. Cir. 1987)).

Szymanski *et al.* teaches a centralized event manager that facilitates communication between event producers and event consumers. Events in Szymanski *et al.*'s invention

correspond to any occurrence in a computer of which software programs running on that computer or on a connected computer need to be informed. Szymanski *et al.* mentions a few examples of events: a keystroke, a mouse click, disk insertion and ejection, a new file created, a directory renamed, *etc.* These events are identified by a name and subject—these are the event attributes. There are two classes of events: event producers and event consumers. In turn, applicant's claimed invention focuses on modeling and exchanging context data, where a software facility exchanges information between sources of context data and consumers of context data. A context is a set of properties (i) of a sensor, (ii) measured by a sensor, (iii) affecting a sensor, (iv) affecting a user of a sensor, or (iv) of the physical environment or information (data) environment of either a sensor or user. A context is characterized by a set of context attributes, which have a name, a value, units, an uncertainty level, and a timestamp.

Independent claims 56 and 57 (and 42) recite, albeit not in identical language, ***information about a context of at least one of the device, the user of the device, the physical environment of the device, or the available electronic information environment of the device.*** Context attributes as disclosed in the subject specification have a much broader scope than event attributes (Figs. 7 and 8, and column 10, section Event Structure; Szymanski *et al.*). Yet more important is that information about a context, which is modeled by context attributes, also concerns with the environment outside the computer as clearly disclosed in the subject specification. (“*e.g.*, ambient pressure” or “temperature of the surrounding air,” page 6, lines 9-14). Szymanski *et al.*'s invention “recognizes the need for efficient communication between different entities ***within the computer*** concerning ***events within the computer***” (emphasis added; column 3, lines 54-64, cited by Examiner). Therefore it is clear that Szymanski does not teach or suggest a context in the sense of applicant's claimed invention.

In addition, independent claims 56 and 57 (and 42) recite ***determining that a circular reference exists when it is determined that a module is to generate another value of the first context attribute such that the generating of the another value causes requesting from another module to generate a value of an attribute whose generating is caused by the generating of the another value of the first context attribute, wherein the circular reference can result in computational deadlock.*** As discussed in response to the previous Office Action, Szymanski *et al.* does not teach determining that a circular reference exists. There are at least two reasons for this. (1) *Event consumers do not request information from each other.* Information on events is

handled by the event manager control unit (305, Fig. 2) Thus, event consumers do not reference each other. In contrast, in the applicant's claimed invention, software modules that generate values for context attributes may request context attributes from other modules, *via* the characterization module, in order to generate new context attributes. For example, a module that computes acceleration may request velocity and time attributes from another module. In another example, determining altitude of a falling object may lead Module 1, which generates altitude attributes, to request velocity attributes from Module 2; in turn, Module 2 may request an altitude from Module 1 in order to use its own time attributes combined with changes in altitude (as provided by Module 1) to compute the velocity of the falling object which is to be sent to Module 1 for further processing. This would be an example where a circular reference may exist, thus creating a loop such that neither attribute can be calculated. Note, in addition, that to detect and handle circular references in the subject invention a unique ID is passed along with attribute value requests. (2) *For a specific event, the event attributes are not changed by other event consumers.* Even though sequential event consumers can generate events, and can stop distribution of an event, the event attributes are not modified. Note that Szymanski does not disclose any logic for sequential event consumers to stop distributing (*via* the event manager) an event. In view of (1) and (2) it is not possible to establish a circular reference among events in Szymanski *et al.*'s invention, which is a necessary condition to determine that a circular reference exists. This explains why the passages (column 7, lines 61-67, and column 8, lines 1-5) in Szymanski *et al.*'s invention cited by the Examiner do not disclose establishing a circular reference. These passages disclose unrelated features such as that a subscription matrix structure is defined and helps track subscription for the events that broadcast consumers are interested; a plurality of sequential consumers can be defined; and a consumer database lists the events in which each sequential consumer is interested.

In view of the foregoing, each and every element as set forth in independent claims 56 and 57 are not expressly or inherently described in Szymanski *et al.* Therefore, removal of rejection of claims 56 and 57, as well as claims that depend on them, is warranted.

II. Rejection of Claims 42 and 50-55 Under 35 U.S.C. §103(a)

Claims 42 and 50-55 stand rejected under 35 U.S.C. §103(a) as being unpatentable over Szymanski *et al.*, (USPN 5,566,637). Rejection should be removed for the following reason.

To reject claims in an application under §103, an examiner must establish a *prima facie* case of obviousness. A *prima facie* case of obviousness is established by a showing of three basic criteria. First, there must be some suggestion or motivation, either in the references themselves or in the knowledge generally available to one of ordinary skill in the art, to modify the reference or to combine reference teachings. Second, there must be a reasonable expectation of success. Finally, the prior art reference (or references when combined) must teach or suggest all the claim limitations. See MPEP §706.02(j). The teaching or suggestion to make the claimed combination and the reasonable expectation of success must both be found in the prior art and not based on applicant's disclosure. See *In re Vaeck*, 947 F.2d 488, 20 USPQ2d 1438 (Fed. Cir. 1991).

As discussed in Sec. II of this Reply, Szymanski *et al.* does not teach or suggest *information about a context of at least one of the device, the user of the device, the physical environment of the device and the available electronic information environment of the device*, neither does it teach or suggest *determining that a circular reference exists when it is determined that a module is to generate another value of the first context attribute such that the generating of the another value causes requesting from another module to generate a value of an attribute whose generating is caused by the generating of the another value of the first context attribute, wherein the circular reference can result in computational deadlock* as recited in independent claim 42. Moreover does Szymanski *et al.* teach or suggest what constitutes a circular reference. Therefore, Szymanski does not teach or suggest all limitations of independent claim 42. In addition, Szymanski *et al.* does not teach or suggest that event attributes represent information about a user. Note that the passage (column 1, line 32-38) that the Examiner cites in this respect only discloses that “interrupts and error conditions may be counted as atypical examples of events”, continuing on to disclose that “for example, the computer might generate an interrupt when a user inserts a floppy disk.” Furthermore, Szymanski *et al.* does not teach or suggest that context attributes are dynamically defined by client modules who indicate an interest in receiving values of defined attributes. Instead, Szymanski *et al.* teaches that the event processing call (InstallSequentialConsumer; Szymanski *et*

al.) tells the event manager control unit that event of a given name and subject should be passed to the sequential consumers. Finally, note that although it may be obvious to one of ordinary skill in the art to apply Szymansky *et al.*'s teaching to a wearable computer (note that here applicant's representative assumes that the first instance of the "portable" word in item 7, page 4 of the Office Action actually means wearable), that is irrelevant because Szymanski *et al.* fails to teach or suggest all claim limitations as set forth by applicant. The latter rendering independent claim 42 and claims dependent on it patentable over Szymanski.

In view of the foregoing, each and every element as set forth in independent claim 42 are not expressly or inherently described in Szymanski *et al.* Thus, this rejection of claim 42 and claims dependent should be withdrawn.

III. Allowable Subject Matter

Claims 43-49 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

It is believed that rewriting dependent claims 43-49 is not necessary in view of the above discussion of independent claim 42, and its patentability over Szymanski *et al.* Applicant's representative respectfully requests that objection to dependent claims 43-49 be removed.

CONCLUSION

The present application is believed to be in condition for allowance in view of the above comments and amendments. A prompt action to such end is earnestly solicited.

In the event any fees are due in connection with this document, the Commissioner is authorized to charge those fees to Deposit Account No. 50-1063 [MSFTP1886USA].

Should the Examiner believe a telephone interview would be helpful to expedite favorable prosecution, the Examiner is invited to contact applicant's undersigned representative at the telephone number below.

Respectfully submitted,

AMIN, TUROCY & CALVIN, LLP

/Himanshu S. Amin/

Himanshu S. Amin

Reg. No. 40,894

AMIN, TUROCY & CALVIN, LLP
24TH Floor, National City Center
1900 E. 9TH Street
Cleveland, Ohio 44114
Telephone (216) 696-8730
Facsimile (216) 696-8731